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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,910	04/25/2001	William E. Morgan	174-827	7548

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EXAMINER

DUONG, THANH P

ART UNIT	PAPER NUMBER
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3711

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

S.M.

Office Action Summary

Application No.

09/841,910

Applicant(s)

MORGAN ET AL.

Examiner

Tom P Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

In response to amendment filed on 8/15/02, claims 1-3, 7-10, 17-20, 28-31, and 34-38 are amended, and 42-46 are added as new claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no description of "a hoop-stress layer disposed between the first and second layers of the encapsulating shell." (See pages 6-7). See MPEP 608.01(b).
2. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no description of "a hoop-

stress layer disposed between the first and second layers of the encapsulating shell.”

(See pages 6-7). See MPEP 608.01(b).

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is no proper antecedent basis for “a hoop-stress layer disposed between the first and second layers of the encapsulating shell.” It appears that the claimed invention should read “...the hoop-stress layer is disposed between an encapsulating shell and a resilient elastomeric layer.” Thus, it renders the claim indefinite and inaccurate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-13, 15-24, and 26-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (5,713,801) in view of Boehm et al. (5,919,100) and Umezawa et al. (5,993,968) or Morgan et al. (6,030,296). Regarding claims 1, 42, and 44-46, Aoyama discloses a golf ball (Fig. 2) having one of the layers is a hoop-stress layer, comprising at least one material with a tensile elastic modulus of at least about 10,000 kpsi. Aoyama does not define four or more layers and a coat of binding material. However, Boehm et al. discloses a golf ball with four or more layers to have a desirable

specific gravity, resiliency, and hardness to improve spin rate, compression, and initial velocity (Col. 8, lines 20-36). Umezawa et al. discloses prior art has a resin film layer form around the wound layer to protect the rubber thread layer from the heat of the cover resulting from injection molding. Umezawa also teaches a urethane dispersion or resin can be impregnated on the surface of the rubber thread layer (Col. 3, lines 9-12) to prevent the rubber thread from unraveling and such impregnation allows higher moment of inertia, improve feel and flight performance. (Col. 3, lines 22-30). Alternately, Morgan also teaches that dipping a wound core in a latex bath to prevent the wound layer from unwrap prior to molding the cover and to control the thickness of the cover. (Col. 2, lines 49-54 and Figures 5-6). Thus, it would have been obvious in view of Boehm, Umezawa or Morgan to one having ordinary skill in the art at the time of the invention was made to incorporate the additional layers as taught by Boehm and a binding coating of Umezawa or Morgan to Aoyama golf ball in order to improve spin rate, compression, and initial velocity, control the thickness of the inner cover and prevent the wound layer from unwrap. Regarding claims 2, 9, and 19, Aoyama discloses a golf ball comprising the following layers: a fluid-filled center (140), a hoop-stress layer comprising at least one material with a tensile elastic modulus of at least 10,000 kpsi, and a cover (110) comprising at least one layer. Aoyama does not disclose an encapsulating shell and a resilient elastomeric component or layer; however, Boehm teaches that encapsulating shell or first layer (20) is desirable for compression properties (Col. 7, lines 31-35) and a resilient elastomeric component or second layer 22 is desirable for different compression and/or hardness. Thus, it would have been obvious in view of Boehm to

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one having ordinary skill in the art at the time of the invention was made to incorporate the encapsulating shell and resilient elastomeric layer as taught by Boehm to Aoyama golf ball in order to improve spin rate, compression, and initial velocity. Regarding claims 3 and 13, Aoyama discloses hoop-stress material comprises a wire, thread, or filament (Col. 3, lines 8-10). Regarding claims 5, 15, and 26, Aoyama discloses golf ball having at least one hoop-stress material is wound or wrapped but does not define in a criss-cross, basket weave, or open pattern about the core. Official Notice is taken that there are known two techniques, a random winding or basket winding technique and a great circle winding technique, which are known and conventional techniques. These techniques have a criss-cross, basket weave, or open pattern and Aoyama's hoop stress layer appears to have such pattern. (See USPN 4,938,471). Regarding claims 6, 16, and 27, it appears that Aoyama discloses the golf ball having the at least one hoop-stress material comprises a plurality of braided elements. Regarding claim 7, it appears that Aoyama discloses the golf ball having the at least one hoop-stress material comprises a plurality of braided elements. Regarding claims 7 and 17, Aoyama discloses the golf ball having one hoop-stress layer which has a tensile elastic modulus of at least about 20,000 kpsi (Col. 3, lines 29-31). Claims 8 and 18 recite limitations similar to claim 1; thus, claims 8 and 19 are rejected for the same reasons as applied in claim 1, above. Regarding claims 10, 11, and 12, Aoyama discloses all the limitations in claims 1 and 2 as described above but does not disclose the first resilient elastomeric and the second resilient elastomeric component. However, Boehm teaches a resilient elastomeric component or second layer 22 is desirable for different compression and/or

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hardness. Although, Boehm does not disclose the second layer 22 as being a first or second resilient elastomeric layer but these two layers have similar or same composition as the second layer 22. Thus, it would have been obvious in view of Boehm to one having ordinary skill in the art at the time the invention was made to include the second layer 22 or a first and second resilient elastomeric component of Boehm to Aoyama's golf ball to have the advantage of different compression and/or hardness as taught by Boehm. Claim 20 has all the limitations of claims 2 and 3 as described above, and claim 4 as described below; thus, claim 20 is rejected for the same reasons as applied in claims 2-4. Regarding claim 21, Aoyama does not disclose the first resilient elastomeric component has a compression of greater than about 50 but Boehm teaches the non-wound core layers are configured such that the core, which is equivalent to the elastomeric component or layer, have a compression of less than 80 (Col. 3, lines 7-10). Thus, it would have been obvious in view of Boehm at the time of the invention was made that Aoyama could have easily fabricated the elastomeric component as taught by Boehm to have a compression greater than about 50 in order to obtain a desired spin rates, hardness, and resiliency. Claims 22, 23, 24, 28, 29 and 30 recite limitations similar to claims 11, 12, 13, 17, 18 and 19, respectively; thus, these claims are rejected for the same reasons as applied in claims 11, 12, 13, 17, 18, and 19, above. Claims 31 and 43 recite limitations similar to claims 1-2; thus, claims 31 and 43 are rejected for the same reasons as applied in claims 1-2, above. With respect to coating thickness and its radial thickness, both Aoyama and Boehm do not disclose the golf ball having the second cross-sectional area is at least about 5 percent larger than

the first cross-sectional area but Morgan teaches that the thickness of wound layer with latex coating (106) may vary depending on the desirable ball properties such as compression and coefficient of restitution. (Col. 5, lines 50-58). Regarding claim 32, Aoyama discloses a golf ball with a solid center (Col. 2, line 46-48). Regarding claim 33, Aoyama discloses a golf ball with a fluid-filled center (Fig. 3, (140)). Regarding claims 34 and 35, it is art-recognized that under the rules of USGA that the diameter of the golf ball shall not be less than 1.680 inches. Thus, it is possible to have the core in any range of diameter, the intermediate layer(s) in any thickness, and the cover(s) in any thickness just as long as the overall design diameter of a golf ball is less than 1.680 inches. Regarding claim 36, Aoyama discloses a golf ball where the center is surrounded by an elastic wound layer (Fig. 1, (105)). Claim 37 recites limitations similar to claim 31; thus, claim 37 is rejected for the same reasons as applied in claim 31, above. Regarding claim 38, Aoyama discloses a golf ball of claim 31, wherein the hoop-stress layer is comprised of a continuous strand having a diameter from about 0.004 to 0.02 inches. (Col. 1, lines 49-51). Claim 39 discloses limitations similar to claim 8. Thus, this claim is rejected for the same reasons. Regarding claims 40 and 41, Aoyama discloses the cover or outermost thermoset material is preferably ionomer or balata, but does not disclose the golf ball's cover having a hardness of about 10 to 90 Shore D and abrasion resistant material. Both Aoyama and Applicant disclose the cover material having similar composition and thus, the cover of Aoyama inherently has similar range of hardness as claimed by the Applicant. Furthermore, Boehm teaches that the cover of a golf ball should have a Shore D hardness of about 65 or greater (Col. 3, lines 9-10) to

improve high abrasion resistance, high tear strength, and resilience (Col. 3, lines 57-60). Thus, it would have been obvious in one having ordinary skill in the art at the time the invention was to make a golf ball of Aoyama to have a cover with a Shore D at least 65 or greater as taught by Boehm. One of ordinary skill in the art would have been motivated to do so in order to improve high tear strength, resilience, durability, flight performance, and restitution.

5. Claims 4, 14, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied in claim 1 above, and in further view of Maehara et al. (5,913,736). Aoyama discloses all the elements except shape memory alloys. Maehara et al. teaches that the shape memory alloy layer provides an effect of tightening the core, thus improving the golf ball's resiliency, resulting an increased travel distance. Maehara discloses a high specific gravity alloy and it is inherent that such alloy has properties of the claimed invention. Thus, it would have been obvious in view of Maehara to one having ordinary skill in the art at the time of the invention was made to incorporate the shape memory alloy of Maehara to Aoyama's golf ball to achieve the benefit as taught by Maehara.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (703) 305-4559. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Sewell can be reached on (703) 308-2126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7768 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4148.

Tom Duong
November 2, 2002


Paul T. Sewell
Supervisory Patent Examiner
Group 3700